Lim Jia Ming

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About me

Highly curious and self-motivated. Dedicated, disciplined, and explores out of my comfort zone. Solid foundations in CS and pure mathematics. Strong debugging skills in unfamiliar low-level codebases.

Education

Monash University Malaysia (Feb 2021 – Jun 2025)
E3001 Electrical and Computer Systems Engineering: Weighted Average Mark (WAM) = 69.82%; CGPA = 3.24

University of Warwick (Sep 2023 – Jun 2024)
Study abroad: One-year student exchange in the UK.
Modules: MEMS and ASICs, VLSI design, Power electronics devices, Fibre optics, Radiowave propagation.

Kolej Yayasan UEM (Jul 2017 – Jun 2019)
STEP University of Cambridge Mathematics admissions test: *S, 1, S, for STEP I, II, III, respectively.*
CIE A-Levels: *Mathematics A* (97), Further Mathematics A* (98), Physics A* (93), Literature in English b (72)*

Work Experience

Mathematics Teacher – Think Academy US (Jun 2025 – Aug 2025)

- Online math lesson delivery to 30+ Pre-Algebra Honor students across the United States and China.
- Provided feedback and communication with parents, optimising for student re-enrolment rate.

Test Engineering Intern – Lumileds Penang P1 (Nov 2024 – Feb 2025)

- Performed cleanroom and optics lab tests for flash LED units using 4 different testing machines.
- Wrote Excel macros in VBA to automate testing workflows, reducing data processing time by 50% and improving the UI design and statistical correctness of GR&R and unit sampling correlation.
- Edited control plans & failure modes analysis meticulously, abiding by IATF-16949 and Lean Six Sigma.
- Converted and validated 500MB inventory and transaction data logs among engineering and finance teams using Python, SQL, and SAP for unique visualisations and business insights.
- Legally accessed production databases (MSSQL and Oracle) to analyse manufacturing traceability.
- Reported critical internal security issues like privilege escalation in .NET enterprise software in C# to the Software Engineering & IT security department in a professional and transparent manner.
- Compiled vendor, customer, and company-wide documentation of process flows & town hall meetings for streamlining future onboardings. Gained familiarity with opto-semiconductor manufacturing verticals.

Publications

J. M. Lim, P. W. C. Ho, and C. P. Tan. ***"Novel Rod-of-Scoops Control to Lower Sediment Disturbance in Deep Sea Mining."*** Proceedings of the IEEE SCOReD 2025, Kuala Lumpur, Malaysia.

Projects

Monash Capstone Project: (2nd place) Autonomous Pick-and-Place Patterning Robot (2024)
Led a diverse team of four with no prior robotics experience to build a multi-sensor, multi-actuator winner.

Undergraduate Research: Custom Centred VPPM Scheme for LED-based digital communications (2023)
Used C, Verilog and OptiSystem to explore custom modulation scheme for visible light communications.
Used Kalman filters to decode noisy 500kbps signals. Analysed eye plots & FFT for 0.4% brightness resolution.

Code golfing
Top 200 code golfer worldwide for Python. Top 30 for SQL (top 10%). Top 300 overall (top 3%) in code.golf.

Scientific data cleaning & processing (03.10.2025 – 08.10.2025)
Developed a Python OCR + data cleaning pipeline converting 18hrs (5.5GB) of vector network analyzer mp4 screen recordings into 28 time-series CSV datasets with custom configs, unit normalization & error filtering.

AWS hosting & cost optimisation for Minecraft server (2025)
Integrated Amazon Web Services' Fargate, EFS, Lambda, CloudWatch, and Route 53; setup Twilio alerts and reduced cost to ~$1.50/month via on-demand startup/shutdown and Docker container hosting.

High Performance Computing: Shallow water simulations (27.03.2023 – 30.03.2023)
Wrote and debugged C++ with OpenMP parallelism to solve 2D shallow-water equations. Achieved 100x improvement from CBLAS with custom multi-threaded solution. Created 3D wave animations using GNUPlot.

Open-source contributions (2020 – 2022)
- Used gdb extensively for CPython to enable UTF-8 encoding in Python's parser with a one-line fix!
- Adapted a web application in React + TypeScript + Tailwind: Jawi Wordle (Right-to-left & Unicode reshaping).
- Fixed parsing and memory bugs in JavaScript for a 16-bit CPU arch MARIE.js. Wrote a quine in assembly.
- Simplified math proofs in Lean 3's mathlib and wrote undergrad-level computability and analysis theorems.
- Metamath world record speedrunner completing 100 symbolic proofs in first-order logic under 40 minutes.

Wikipedia editing
Made 3,800+ edits to English, Indonesian, and other Wikimedia projects, making cited knowledge accessible.

Currently Reading

Islamic Financial System: Principles and Operations – INCEIF University
A comprehensive textbook on Islamic finance that balances ideal theory with true practice of avoiding riba.

Deep-Sea Mining: Resource Potential, Technical and Environmental Considerations – Rahul Sharma
Studied critical metal extraction and supply (copper, nickel, cobalt), mining economics & mineral commodity spot/futures pricing, deep sea exploration & exploitation techniques, ore processing tradeoffs, and environment, policy and economic feasibility issues. Referenced closely for my own proposed Final Year Project (published).

Volunteering Work

Malaysian Red Crescent volunteer (May 2023 – present)
Volunteered at mobile clinics for registration, medical data entry, vital signs readings and logistical assistance. Helped plan and facilitate four-day youth camps for 100+ refugee students and 20+ volunteers.

Student Action for Refugees: Conversation Club volunteer (Oct 2023 – May 2024)
Conducted 1-to-1 English lessons for refugees in Coventry, United Kingdom from a wide range of backgrounds.

Project Anak Malaysia: Education volunteer (July 2023)
Facilitated educational activities at a rural primary school in Sabah. Engaged with local community.

Achievements and Leadership

Imperial College London: President's Undergraduate Scholarship (2020)
Awarded a prestigious scholarship for one of Imperial's most competitive courses, MEng Mathematics and Computer Science. Although insufficient to fund my studies there, I participated and completed coursework over a month's worth of online classes, and thus am technically recognised as an official alumni.

Bugcrowd bug bounty: High Severity IDOR and API exposures (2022, 2024) *$1800 P1–P3 vulnerabilities.*

Kolej Yayasan UEM: Maths Competition Organiser (2018) *Question design and event management.*

Student Councillor, Tenby International School (2016, 2017) *Elected twice to represent the student body.*

Additional skills: GNU/Linux (Ubuntu), PyTorch, Pandas, NumPy, Git, SQLite, OpenAI API, Wireshark, FFmpeg, event/trip logistics planning, Yahoo Finance, HTML, CSS, WeChat, Canva.

Languages:

Fluent: English (IELTS: 8.0)

Working proficiency: Mandarin, Malay.

Basic: Modern Standard Arabic.